

10Z10

Refer to type 6Z10.

11

Refer to chart at end of section.

11AF9

Refer to type 6AF9.

11AR11

Refer to type 6AR11.

11BM8**HIGH-MU TRIODE—
POWER PENTODE**

Miniature type used as vertical deflection oscillator or af amplifier and vertical deflection amplifier or af power amplifier in television receivers. **Outlines section, 6G;** requires miniature 9-contact socket. This type is identical with type 16A8/PCL82 except for the following items:

Heater Voltage	10.7	volts
Heater Current	0.45	mA

11BQ11

Refer to type 8BQ11.

11BT11**DUAL TRIODE—
SHARP-CUTOFF PENTODE**

Duodecar type used in television receiver applications. The triode units are used for general-purpose applications; the pentode unit is used in video-amplifier service. **Outlines section, 8B;** requires duodecar 12-contact socket. **Heater:** volts (ac/dc), 10.7; amperes, 0.6; warm-up time (average), 11 seconds; maximum heater-cathode volts, ± 200 peak, 100 average.

Class A₁ Amplifier**MAXIMUM RATINGS (Design-Maximum Values)**

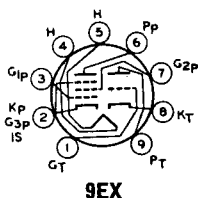
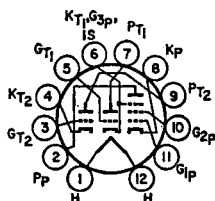
	Triode Unit No. 1	Triode Unit No. 2	Pentode Unit		
Plate Voltage	330	330	165	165	volts
Grid-No.2 (Screen-Grid) Voltage ..	—	—	165	165	volts
Grid-No.1 (Control-Grid) Voltage, Positive-bias value	0	0	0	0	volts
Plate Dissipation	1.5	2	3.5	3.5	watts
Grid-No.2 Input	—	—	1.5	1.5	watts

CHARACTERISTICS

Plate Voltage	200	200	35	150	volts
Grid-No.2 Voltage	—	—	100	100	volts
Grid-No.1 Voltage	—	—	0	—	volts
Cathode-Bias Resistor	270	470	—	82	ohms
Amplification Factor	69	40	—	—	—
Plate Resistance (Approx.)	12500	7600	—	51000	ohms
Transconductance	5500	5300	—	19000	μ mhos
Plate Current	7.1	7.2	54	17.4	mA
Grid-No.2 Current	—	—	13.5	3.2	mA
Grid-No.1 Voltage (Approx.) for plate current of 100 μ A	—	—8	—	—6.6	volts
Grid-No.1 Voltage (Approx.) for plate current of 50 μ A	—5.5	—	—	—	volts

MAXIMUM CIRCUIT VALUES

	Triode Unit No. 1	Triode Unit No. 2	Pentode Unit		
Grid-No.1-Circuit Resistance:					
For fixed-bias operation	0.5	0.5	0.05	0.1	megohm
For cathode-bias operation	1	1	0.1	0.1	megohm

**9X****12GS**

Refer to chart at end of section.

11CA11

Refer to chart at end of section.

11CF11

Refer to chart at end of section.

11CH11

Refer to chart at end of section.

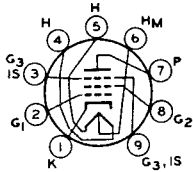
11CY7

Refer to type 6DS5.

11DS5

Refer to type 6FY7.

11FY7



9BF

SHARP-CUTOFF PENTODE

11HM7

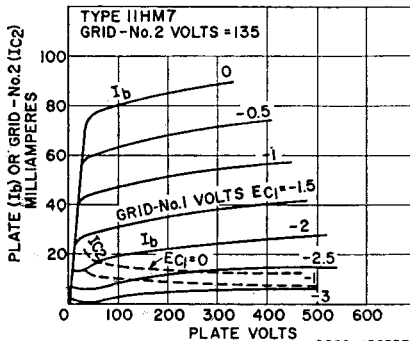
Miniature type with frame grid used as video output amplifier in color television receivers. Outlines section, 6E; requires miniature 9-contact socket.

Heater Arrangement	Series	Parallel	
Heater Voltage (ac/dc)	11	5.5	volts
Heater Current	0.3	0.6	ampere
Heater-Cathode Voltage:			
Peak value		±200 max	volts
Average value		100 max	volts
Direct Interelectrode Capacitances:			
Grid No.1 to Plate		0.15 max	pF
Grid No.1 to Cathode, Heater, Grid No.2, Grid No.3, and Internal Shield		14	pF
Plate to Cathode, Heater, Grid No.2, Grid No.3, and Internal Shield		5	pF

Class A₁ Amplifier

MAXIMUM RATINGS (Design-Maximum Values)

Plate Voltage	330	volts
Grid-No.2 (Screen-Grid) Supply Voltage	330	volts
Grid-No.2 Voltage	See curve page 300	
Grid-No.1 (Control-Grid) Voltage, Positive-bias value	0	volts
Plate Dissipation	7	watts
Grid-No.2 Input:		
For grid-No.2 voltages up to 165 volts	1	watt
For grid-No.2 voltages between 165 and 330 volts	See curve page 300	



CHARACTERISTICS

Plate Supply Voltage	200	volts
Grid-No.3 Voltage	0	volts
Grid-No.2 Voltage	135	volts
Cathode-Bias Resistor	47	ohms

Plate Resistance (Approx.)	40000	ohms
Transconductance	30000	μ mhos
Plate Current	30	mA
Grid-No.2 Current	5.2	mA
Grid-No.1 Voltage (Approx.) for plate current of 100 μ A	-4.5	volts

MAXIMUM CIRCUIT VALUES

Grid-No.1-Circuit Resistance:		
For fixed-bias operation	0.1	megohm
For cathode-bias operation	0.25	megohm

11JE8 Refer to chart at end of section.

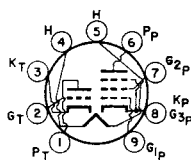
11KV8 Refer to type 6KV8.

11LQ8 Refer to type 6LQ8.

11LT8 Refer to type 6LT8.

11MS8**HIGH-MU TRIODE—
BEAM POWER TUBE**

Miniature type used in combined vertical-deflection-oscillator and vertical-deflection-amplifier applications in black-and-white television receivers. **Outlines section**, 6G; requires miniature 9-contact socket. **Heater:** volts, 11.6; ampere, 0.45; warm-up time (approx.), 11 seconds; maximum heater-cathode volts, ± 200 peak, 100 average.

**9LY****Class A₁ Amplifier**

CHARACTERISTICS	Triode Unit		Beam Power Unit	
	Plate Voltage	100	100	120
Grid-No. 1 (Control-Grid) Voltage	—	—	110	volts
Grid-No. 1 (Control-Grid) Voltage	-0.85	0	-10	volts
Plate Current	5	10	50	mA
Grid-No. 2 Current	—	—	3	mA
Transconductance	5500	7000	8500	μ mhos
Amplification Factor*	60	63	5.8	
Plate Resistance (Approx.)	11	9	13	kilohms

Vertical-Deflection Oscillator and Amplifier

For operation in a 525-line, 30-frame system

MAXIMUM RATINGS (Design-Maximum Values)

Plate Voltage	250	250	volts
Peak Positive Pulse Plate Voltage#	—	2000	volts
Grid-No. 2 Voltage	—	200	volts
Grid-No. 1 Voltage	—	0	volts
Plate Dissipation	0.5	6	watts
Grid-No. 2 Input	—	1.5	watts
Average Cathode Current	15	70	mA

MAXIMUM CIRCUIT VALUES

Grid-No. 1 Circuit Resistance	—	2	megohm
Grid-No. 1 Circuit Resistance:			
For fixed-bias operation	1	—	megohm
For cathode-bias operation	3.3	—	megohms

Pulse duration must not exceed 15% of a vertical scanning cycle (2.5 milliseconds).

* Grid-No. 2 connected to plate at socket.

11Y9 Refer to chart at end of section.

11Y9/LFL200 Refer to chart at end of section.

12A5 Refer to chart at end of section.

12A6 Refer to chart at end of section.